Lowland Technology International 2015; 17 (1): 47-52
International Association of Lowland Technology (IALT): ISSN 1344-9656

Technical Note

Awareness status of sightseeing bus entrepreneurs: A case study in rural areas of Thailand

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ARTICLE INFORMATION

Article history:

Received: 20 November, 2014
Received in revised form: 09 April, 2015
Accepted: 07 May, 2015
Published on: June, 2015

Keywords:

Sightseeing bus
Bus company management
Cluster analysis

ABSTRACT

The main objective of this study is to contemplate the awareness of entrepreneurs of sightseeing bus services as used by Thai travelers for private group tours and field trips through four considerations including 1) provision of convenient and safe buses; 2) provision of customer service satisfaction; 3) provision of experienced and well-behaved bus drivers; and 4) provision of bus services under travel safety. The study was carried out through interviews with 25 bus company representatives and found that factors which were raised the highest priority by entrepreneurs are provision of bus drivers having a valid driving license matching the vehicle type according to law and the provision of regular bus cleaning service. While a factor related to the provision of auto massage seats for relaxation was overlooked by all respondents. Moreover, the research team classified factors into 5 groups from A to E (highest to lowest awareness) using clustering analysis possibly making it easier to develop policy interventions appropriate with awareness of each entrepreneur group.

1. Introduction

The tourism industry is one of the driving forces of the Thailand economy - not only creating massive revenue, ranked first in total goods and service value of the nation, but also generating revenue for other related businesses such as hotel, restaurant, souvenir and transport businesses; thus bringing about massive investment, employment as well as income distribution to local communities (Ministry of Tourism and Sports, 2011). Of interest is sightseeing bus services which predominantly enhances a tourist's journeys. According to survey of National Statistical Office of Thailand, 16 % of mode share for domestic travel were rental vehicles including vans, cars and sightseeing buses (National Statiscal Office, 2012). In this study, sightseeing bus service was focused on 4 standards from standard 1 to 4 as illustrated in Figure 1. To satisfy customers, the service provision should principally grasp multidimensional facets i.e., body condition, service quality, and bus driver (Hensher et al., 2003; Ratanavaraha and Jomnonkwao, 2014; Wen et al., 2005). Each dimension contains various sub-factors, for instance body condition aspect must consider vehicle age, seats, air-conditioning, security accessories, toilet, etc. While factors related to cleanliness, amenities and safety should be rigorously noted in terms of the service perspective (Stradling et al., 2007). For the driver, age and experience are two crucial

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Note: Discussion on this paper is open until September 2015

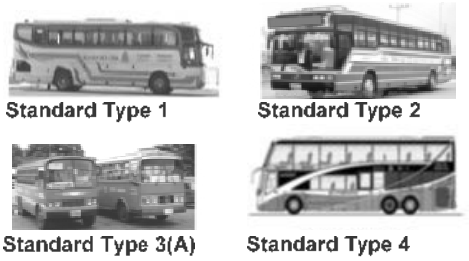

Fig. 1. Types of sightseeing bus standards in Thailand.

factors (Chang and Yeh, 2005; Hensher et al., 2003; Ratanavaraha and Jomnonkwao, 2014).

From the previous studies in Thailand, Iamtrakul and Pimonsathean (2010) found that there were many factors influencing accident occurrences such as urban factor, road factor, and external factor. However, if sightseeing bus service provides good safety management, the risk of accidents from the above mentioned factors will decrease. Another major concern for the bus service entrepreneur incorporates customer safety (Stradling et al., 2007) owing to whether short- or long- distance travel poses the likelihood of accidents if travelers choose unsafe vehicles (Chang and Yeh, 2005). It happens more frequently than not, that bus companies are incognizant to inspection of vehicle readiness and safety equipment such as safety belt, fire extinguisher, glass-breaking device, etc. So, when accidents occur, unexpected loss of lives and property are much more than should be expected. From the aforementioned examples, it is found that the entrepreneurs' awareness plays an outstanding important role in the reduction of loss of accident occurrences and serious injuries from accidents.

In addition, customer satisfaction and loyalty are essential for businesses (Gronroos, 2000; Kotler, 1997). For this reason, entrepreneurs' awareness of vehicle body condition, drivers and service quality tend to create a competitive advantage for the firms. Yet, in case of a minor marketing competency, it is necessary for the government to set out policies that motivate entrepreneurs to be conscious of such issues i.e., providing regulations or innovative measures via tax reduction giving rise to a sustainable standard for sightseeing bus services.

Thus, the objective of this study is to explore the contemplation of non-regular route bus entrepreneurs in four standards including 1) provision of convenient and safe buses; 2) provision of customer service satisfaction; 3) provision of experienced and well-behaved bus drivers; and 4) provision of bus services under travel safety. The results of the study can be used as the data determining the policy to develop suitable sightseeing bus service.

2. Methodology

2.1 Conceptual framework

The study aims to explore the status of sightseeing bus owners' awareness in four dimensions including convenience, service quality, drivers and safety. In this respect, awareness levels of entrepreneurs in each dimension was to comprehend through categorizing factors into 5 groups from A to E (from highest to lowest awareness of sightseeing bus entrepreneurs) using cluster analysis. The reason for dividing into five groups is because this number is neither too small nor too large for easy understandings. Actually, most studies more likely divide personal's opinions into five levels of which the meanings can be interpreted each separately. Consequently, outcomes would benefit related agencies by developing awareness strategies for sightseeing bus entrepreneurs, particularly in the dimensions with low awareness levels toward a development of sustainable bus service quality as well as travel safety for users. The strategies for awareness development include promotional campaigns for users to use standard buses, the request for entrepreneurs' cooperation to develop their services, the contest of standard buses, and the legislative enactment.

2.2 Study area and data collection

Data was gathered from the entire population of sightseeing bus firms in Nakhon Ratchasima, the largest and second most populated province in Thailand, with many popular tourist attractions such as Khao Yai National Park, Dan Kwian Village, Phimai Historical Park, etc. The survey process involved developing a questionnaire and was sent to all 29 bus company owners as respondents via post using the list from the Land Transport Department. Although there are many data gathering approaches, the post-survey was chosen since most tour bus businesses are small companies comprising only 1-3 buses and the owners usually go with the trip. So this method is the simplest and most convenient way to acquire data. For designing a questionnaire, the notion was appropriately developed from the study of Wen et al. (2005) with a classification of entrepreneurs' awareness into 4 dimensions including convenience, service quality, driver and safety, plus some factors in concert (agreement/accordance) with Thai contexts. Some question items, which were developed from the study of Wen et al. (2005) in order to

suit the context of Thailand, included item 2, item5-8, and item 11-29.

2.3 Cluster analysis

Cluster Analysis is a technique for classifying homogenous data into categories without an expectation of how many groups would be given; albeit a set of data are divided by values of parameters in such a way that the parameters within the same group would have more similar factors than those in other groups (Erik and Marko, 2011). Such technique has been applied to many tourism studies such as Jackson (2006), Jackson and Murphy (2006), Weaver and Lawton (2013) and Yang et al. (2013). The clustering approach encompasses various types or sub-techniques with only two popular techniques being used including Hierarchical Cluster Analysis and Non-hierarchical Cluster Analysis or K-Means Cluster Analysis. For this study, Hierarchical Cluster Analysis was applied due to categorizing only 5 groups which are less than 200. The Hierarchical clustering approach as illustrated in Figure 2 (Erik and Marko, 2011)was used for an analysis of similar data via SPSS V.16 (SPSS Inc., 2007). In SPPS program, Agglomerative Hierarchical Cluster Analysis was used by initially supposing that there were n sub –clusters, items or items having the shortest distance or the most similar items which were jointly grouped. The rest was n-1 sub-clusters. Then, the distance or the similarities were found out from n–1 of new sub clusters. The shortest distance groups or the most similar groups were repeatedly grouped. Finally, there was only a single sub-cluster with n items.

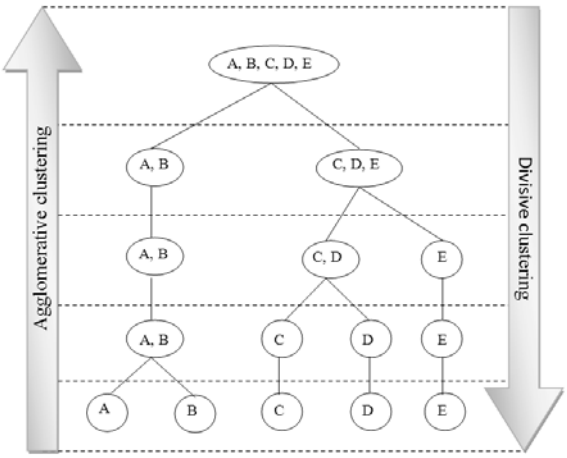

Fig. 2. Hierarchical Cluster Analysis (Erik and Marko, 2011).

In grouping data, the between – groups linkage or average linkage between groups method – also referred as UPGMA (Unweighted Pair-Group Method using Arithmetic averages) was selected to calculate the average of the distances between all pairs of cases in Cluster i and Cluster j where i j. If the average of distances between Cluster i and Cluster j is shorter than other Clusters, then an agglomeration of Cluster *I* and *j* is brought to practice (Burns and Burns, 2009; Erik and Marko, 2011) as shown in Fig. 3.

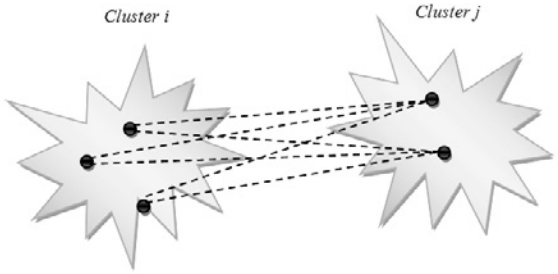

Fig. 3. Average linkages (Burns and Burns, 2009).

3. Findings

3.1 Descriptive statistics

Based on the post-survey of 29 sightseeing bus businesses, 25 firms returned complete information (86.21%). When comparing the standard ratio for vehicle standard collected from sightseeing bus firms in the Nakhon Rachasima Province with the record of Department of Land Transport as of 30 August 2011, the study found almost similarity between the proportion of sightseeing buses based on survey and the total registered sightseeing buses of 1,081 comprising bus standard Type 1 to 4 with 261, 94, 565 and 161 buses, respectively. The survey results indicated the majority of buses entrepreneurs in rural provinces usually provide tour service with bus standard Type 3 (65 %), followed by bus standard Type 4 (24 %). The detailed examination is demonstrated in Figure 4.

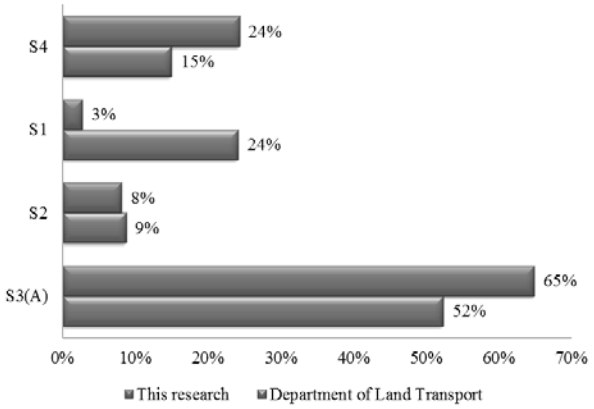

Fig. 4. Sightseeing bus ratio by standard type compared between survey results and the record of Department of Land Transport.

3.2 Entrepreneurs' awareness score from cluster analysis

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According to the opinion survey with 29 questions relating to convenience and safety equipment services, the study classified degree of entrepreneurs' awareness into 5 levels as follows:

A: The highest level of awareness
B: High level of awareness
C: Intermediate level of awareness
D: Low level of awareness
E: The lowest level of awareness

From the clustering method, factors were divided into 5 groups that each group exhibits distinctive features as described in Table 1 and Table 2.

Table 1. Statistical values of each cluster group.

Statistics	Group				
	A	B	C	D	E
Mean	22.27	17.0	12.5	7.2	1.4
Median	22	-	13	7	2
Variance	2.018	-	3.1	2.2	1.8
Std. Deviation	1.421	-	1.761	1.483	1.342
Minimum	20	17	10	5	0
Maximum	25	17	15	9	3

Table 2. Score, percentage and group by each factor.

No	Consideration issues	Score	Percentage	Group
	Convenience Dimension			
1	Well-designed, comfortable, clean and undamaged bus seats	22	88 %	A
2	Lovely, high-quality and clean blankets	7	28 %	D
3	Clean and convenient toilet with no bad odors	5	20 %	D
4	Air-conditioning system in good working condition, cooling effectively, having neither bad odors nor water leaking	8	32 %	D
5	Seats reclining a full 135 degrees	13	52 %	C
6	Auto massage seat for relaxation	0	0 %	E
7	Easily adjustable neck pillow for personalized comfort	2	8 %	E
8	Adjustable *foot rest* for *bus seat*	9	36 %	D
9	Providing audio-video *entertainment facilities i.e.,* TV, DVD player, MP3, karaoke machine, etc.	22	88 %	A
10	Providing the suitable seat width with greater spacing between seats	24	96 %	A
	Service Quality Dimension			
11	Bus driver and receptionist uniforms to be kept clean and neat	13	52 %	C
12	Providing over-the-counter (OTC) medicine and first aid services	10	40 %	C
	Driver Dimension			
13	Age between 30 - 45 years	20	80 %	A
14	At least *5 years* of *driving experience* (after getting a valid driving license for this vehicle type)	21	84 %	A
15	Having at least a lower secondary school (or Mathayom 3) education	22	88 %	A
16	Holding a valid driver's license matching the vehicle type	25	100 %	A
17	Having route skills	22	88 %	A
18	Receiving driver training from the company or other organizations	17	68 %	B
19	Non-drinking or -smoking	21	84 %	A
	Safety Dimension			
20	Providing quality safety belt for all seats	3	12 %	E
21	*Having* a *fire extinguisher*(s) to the applicable standards with instructions	23	92 %	A
22	Installing glass-breaking devices with instructions	17	68 %	B
23	Offering an emergency exit door with instructions	11	44 %	C
24	*Having global positioning system* (*GPS*) installed	2	8 %	E
25	Having vehicle inspection report	23	92 %	A
26	Regular maintenance of bus cleanliness	25	100 %	A
27	Providing *accident insurance coverage over mandatory insurance for all seats (greater than 500,000 THB/person)*	15	60 %	C
28	For long-distance travel distance beyond 400 km, two drivers must be provided by the business owner because a driver is *not supposed to continue driving for more than 4 hours as issued by law*	13	52 %	C
29	Providing suggested safety equipment usage via video, especially how to use glass breaking device, *fire extinguisher and safety belt, etc.*	7	28 %	D

Group A interprets average score of 22.27 (S.D. = 1.421) with a maximum score of 25 and minimum score of 20 which involves 12 factors including (1) Provision of well-designed, comfortable, clean, and undamaged bus seats (2) Provision of audio-video entertainment facilities i.e., TV, DVD player, MP3, karaoke machine, etc. (3) Arrangement of the suitable seat width with greater spacing between seats (4) Driver's age between 30 - 45 years (5) At least 5 years commercial driving

experience (after getting a valid license of this vehicle type) (6) At least a lower secondary school education (or Mathayom 3) (7) A route-skilled driver (8) Non-drinking and -smoking driver (9) Installation of a fire extinguisher(s) to the applicable standards with instructions (provided) (10) Provision of vehicle inspection report (11) Regular maintenance of bus cleanliness (12) Driver holding a valid driving license consistent with the vehicle type.

Group B demonstrates an average score of 17.0 (S.D. = 0) with a maximum score of 17 comprising 2 factors including(1) Driver receiving driver training from the company or other organizations (2) Installation of glass-breaking devices with instructions (provided).

Group C encompasses an average score of12.5 (S.D. = 1.761) with a maximum score of 15 and minimum score of10 that consists of 6 factors including (1) Seats reclining a full 135 degrees (2) Bus driver and receptionist uniforms to be kept clean and neat (3) Provision of the emergency exit door with instructions (4) Provision of accident insurance coverage over mandatory insurance for all seats (greater than 500,000 THB/person) (5) Provision of two drivers for long-distance travel distance beyond 400 km due to a law requiring a driver not to drive for more than 4 hours without a break (6) Provision of over-the-counter (OTC) medicine and first aid services.

Group D displays an average score of 7.20 (S.D. = 1.483) with a maximum score of 9 and minimum score of 5 containing 5 factors including (1) Lovely, high-quality and clean blankets (2) Clean and convenient toilet with no bad odors (3) Air-conditioning system in good working condition, cooling effectively, having neither bad odor nor water leaking (4) Adjustable footrest for bus seats (5) Suggested safety equipment usage via video, especially how to use glass breaking device, fire extinguisher and safety belt, etc.

Group E exhibits an average score of 1.40 (S.D. = 1.342) with a maximum score of 3 and minimum score of 0 which encompasses 4 factors including (1) Provision of auto massage seats for relaxation (2) Provision of an easily adjustable neck pillow for personalized comfort (3) Provision of quality safety belts for all seats (4) Installation of global positioning system (GPS).

4. Discussions and conclusions

According to the study, the findings mainly involved 29 factors relating to sightseeing bus service operation through data gathering from 25 bus firms which can be categorized into 4 dimensions including convenience, service quality, drivers and safety. The results indicated 12 factors obtaining the awareness degree A; while other factors exemplified the percentage of awareness in level B (2 factors), C (6 factors), D (5 factors) and F (4 factors). It is interesting that an auto massage seat for relaxation factor was ignored by the analysis; on the other hand all sightseeing bus entrepreneurs (100 %) were rigorously aware of drivers holding a valid driving license consistent with the vehicle type and a regular maintenance of bus cleanliness factors.

Concerning the convenience dimension with a focus on 10 items in a questionnaire, 7 factors (items) acquired scores less than the B level that 2 of 7 was classified in Group E including the provision of an auto massage seat for relaxation (0 %) and provision of an easily adjustable neck pillow for personalized comfort (8 %). One reason for the lowest awareness of entrepreneurs on 2 factors as mentioned was possibly derived from a higher cost of convenience devices; however if sightseeing bus business owners make a larger investment in increasing vehicle standards, so that customer satisfaction would be greater resulting in greater loyalty to the company (Wen et al., 2005). It can also be expected that the willingness of such a customer group to pay will be high.

In terms the of service quality dimension, only 2 factors related to bus driver and receptionist uniforms being kept clean and neat and providing over-the-counter (OTC) medicine and first aid services were taken into consideration based on the clustering which obtained C level. These two factors greatly reflect the service image on customer care with a reasonable operation cost, so bus owners should be mindful of these aspects.

Regarding the drivers dimension vis-à-vis 7 items of a questionnaire, the entrepreneurs' awareness levels in this perspective were judged to be in level A for 6 items and level B for the seventh. Therefore, it can be understood that bus owners in Thailand expressed greater concern in this dimension as a consequence of 96.76% of accidents caused by bus drivers based on the statistical records (Bureau of Highway Safety, 2011).

According to results based on 10 items related to the safety dimension, 3 items (factors) were found to obtain the entrepreneurs' awareness score up to level B. It was surprising that the provision of quality seat belts for all seats factor got only 12 % of awareness level categorized in Group E; although it was theoretically accepted that the use of seat belts reduce the likelihood of severe injuries by 15.6 % (Blincoe et al. (2002) cited in Nambisan and Vasudevan (2007)). Another factor attaining a low percentage of entrepreneurs' awareness (8%) is the installation of a global positioning system (GPS); albeit the action would be useful for tracking bus drivers' behaviors while driving, especially

when they exceed the speed limit; thus reducing the risk of accidents (Cortés et al., 2011).

In considering awareness of entrepreneurs along with 4 dimensions in the aforementioned, although the firms' owners took cognizance of many factors in level A, they tended to be less aware of various factors (below level B). Hence, the government must provide potential measures and policies to motivate sightseeing bus entrepreneurs to become more concerned about such issues in order to improve bus service standards; such as reduction of tax rates for businesses meeting service standards determined by the government.

The limitation of this study is the ranked scores which are only from the entrepreneurs' enquiry without considering any other additional factors. For further studies, there should be consideration on other supplementary factors such as the scale of entrepreneurs, the existing company policies in order to determine more appropriate policies.

Acknowledgements

The authors would like to thank Suranaree University of Technology (SUT) and National Health Foundation for the funding of this research project. In particular, we are grateful to Dr. Thanapong Jinvong, Director of Road Safety Thai Organization, National Health Foundation for his valuable advice, comments, and suggestions. We also thank owners of bus picture in Fig. 1 from various sources and the students and staff at SUT for their continual support in various aspects related to data collection, management, and analyses to complete the study.

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